

THE MORANDUM

Mora Sestia
Cape Breton

Lopez 1900

some
mile or
first
stream
pond found

SHOUT
SHARE IT



Record of work done for Chas. D. Walcott,
Director of U. S. Geo. Survey, on the Cambrian
formations in Cape Breton during August
and Sept. 1900.

August 7th.

Arrived at Marion Bridge, 12 miles
from Sidney, at noon. After dinner
got a boy to show me the way to
McNeil's Brook where the Upper
Cambrian beds of Mr. Mathews' section
outcrop. This brook empties into
Mira River a mile and a half
east of Marion Bridge.

Found outcroppings of Cambrian
shales along the west bank of the
stream in cliffs 10 to 25 ft. high.

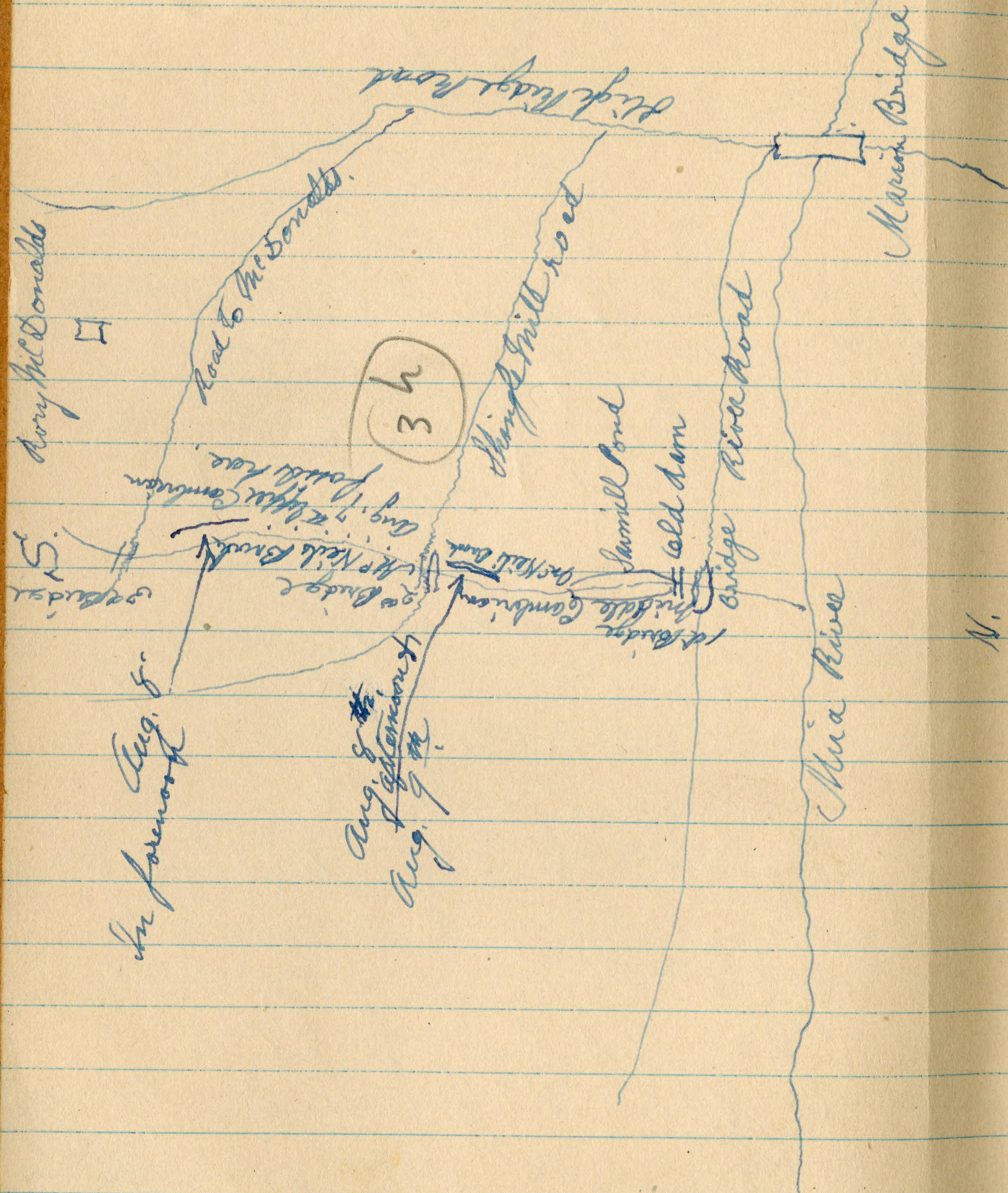
Beddings made up of thin black
and grey shales with bands of
hard grey and bluish limestone
and sandstone. Half a mile or
more upstream above the first
bridge crossing the stream
above the old sawmill pond found

O. Ward Loper,
Middleton
Conn. U. S. G. S.

Please return to above address if found.

29.

W.



3.

Many small trilobites and brachiopods. Traced these fossils some distance above the bridge and collected a good number of specimens.

August 8th

Followed the Upper Cambrian Shales on McNeil's brook for one and a half miles towards the 3^d bridge on McDonald road See diagram page 2.

Hired Rory McDonald to help me work up some of the very hard sandy bands out of the water in the bed of the brook. Out of these we secured quite a number of good specimens.

In the afternoon worked down the stream and below the bridge crossed by the Shingle Mill road found ~~Lower~~^{middle} Cambrian brachiopods. These were in a hard band in greyish shales about 10 ft. above the bed of the brook on the west bank of the stream just below the bridge. Left the fossils of this bedding for tomorrow. See diagram page 2.

Two localities marked Aug. 8th & Aug. 8th & 9th.
Forenoon & Afternoon.

6

August 9th.

Worked all day on the shale below the bridge on the Shinglemill road on McNeil's Brook and secured a good number of brachiopods.

7.

August 10th.

Made a more thorough search for fossils along the Upper Cambrian of McNeil's Brook but found nothing more.

On the hill going east up Shinglemill road found a outcropping of limestone with impressions apparently of small brachiopods. Very indistinct but made a collection.

August 11th.

Raining very hard all day and not able to do any field work.

Monday, August 13th,

Worked all day on Mr. Mathew Etcheminan at Mc Codrums Brook. Could not find fossils of any kind.

From the exposure of the conglomerates up there are accessible about 30 ft. of grey and blue shales with many hard sandy bands. From this to the next brook for about a mile eastward, the shales are covered.

Mc Codrums Brook is about 2 $\frac{1}{2}$ miles west from Marion Bridge, and north of Mira River.

10.

Aug. 14th.

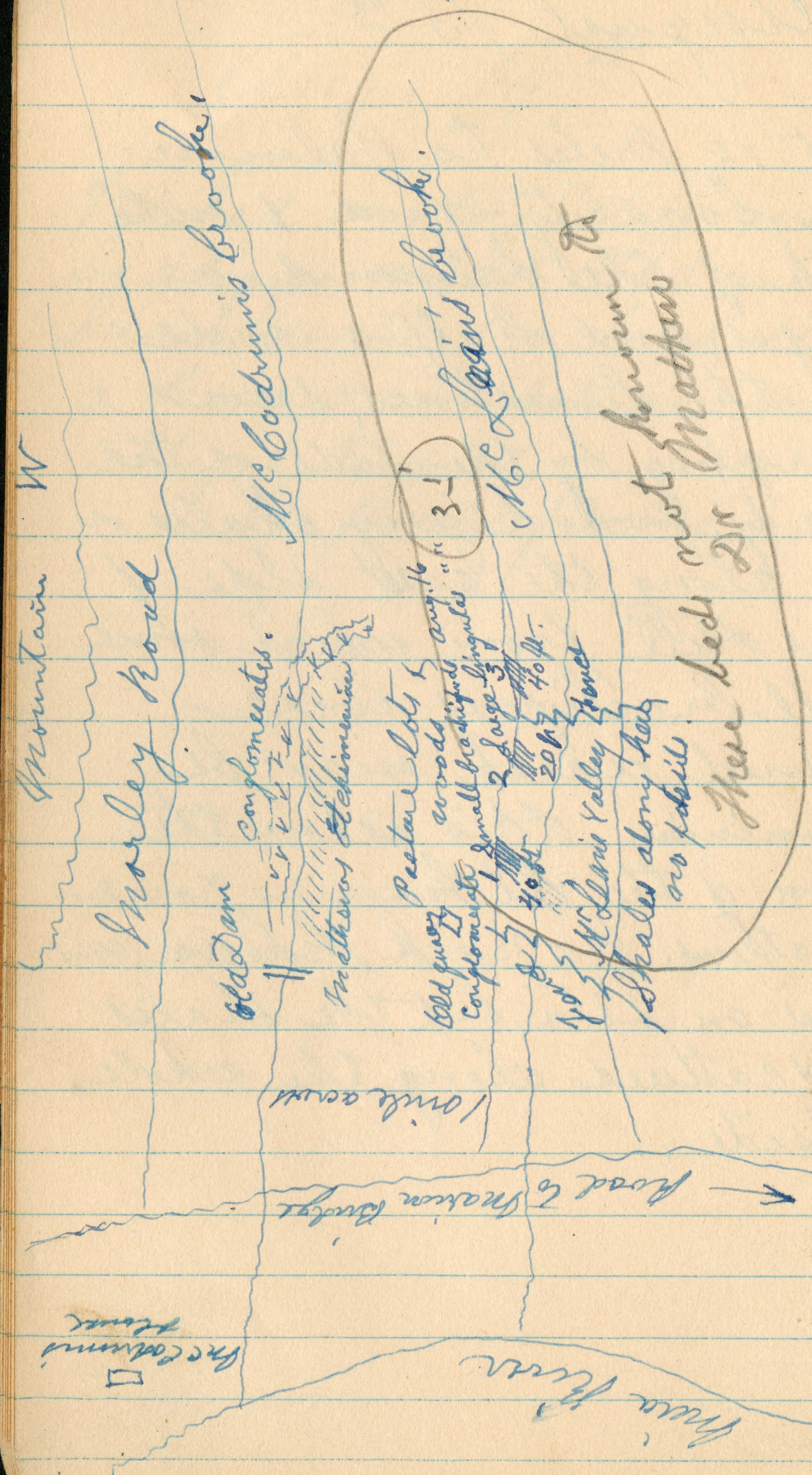
Worked on the different beddings at Mc Codrins Brook until 1 o'clock when a hard rain set in and obliged to quit.

No fossils found.

11

August 15th.

Went 12 miles to Salmon River locality, and 1 mile south of the Salmon River bridges, and half a mile from the limestones, seen outcropping by the side of the highway, found grey shales or flags along the east slope of Gillis Hill from which some small brachiopods were obtained which may be Etcheminian. This is in the region of the Etcheminian zone of Matthews. No rock, however, was found in situ, but the shales are scattered along the whole hillside.



August 16th

Worked all day on outcroppings of black and bluish and greyish shales on McLean's Brook. This is the brook one mile east of McCodrum's Brook. At first outcropping on the west bank of the brook found a few small brachiopods. At second outcrop of shales as marked in diagram found large Lingulella - or Mathews obolus. Made quite a collection at this outcrop. These evidently belong to the Glenus zone of Mathews section.

14

August 17th.

Forenoon raining.

In Afternoon showery but
 went to McLean's Brook and
 collected 20 spec. from
 outcrop No. 2

15-

August 18th.

In forenoon searched along
 McKeegan's Brook which is
 one mile and a half
 West of McGodrum's Brook
 but found no Cambrian shales.

In the afternoon returned to
 McLean's Brook and secured
 a good number of specimens
 from outcrop No 2
 Alenus zone.

16

Monday August 20th

Raining in torrents.

Packed two boxes of specimens and attended to correspondence.

Wrote last week to Mr. Mathew telling him that I could not find any fossils in his Etchemman. Received a letter from him today stating that he was not surprised that I did not find them, that they were very rare. Said they were in the sandy bands of the shale. Shall make another search for them.

17

August 21st

Still raining very hard.

No chance for field work.

Ground up hammers and chisels and wrote letters.

18

August 22nd

Still bad weather, but
 went out to McLean's Brook
 and worked under an
 umbrella and collected
 about 50 fine specimens.
 These from outcrop No. 2.
 Showers all day.

19

August 23^d

Spent the forenoon and until
 2 P.M. searching again
 for fossils at McCodrum's Brook
 on Mathew's Etcheminian.

Found nothing.

Went from there to McLean's
 Brook and finished the day
 on No. 2. Got about 40 spec.

August 24th

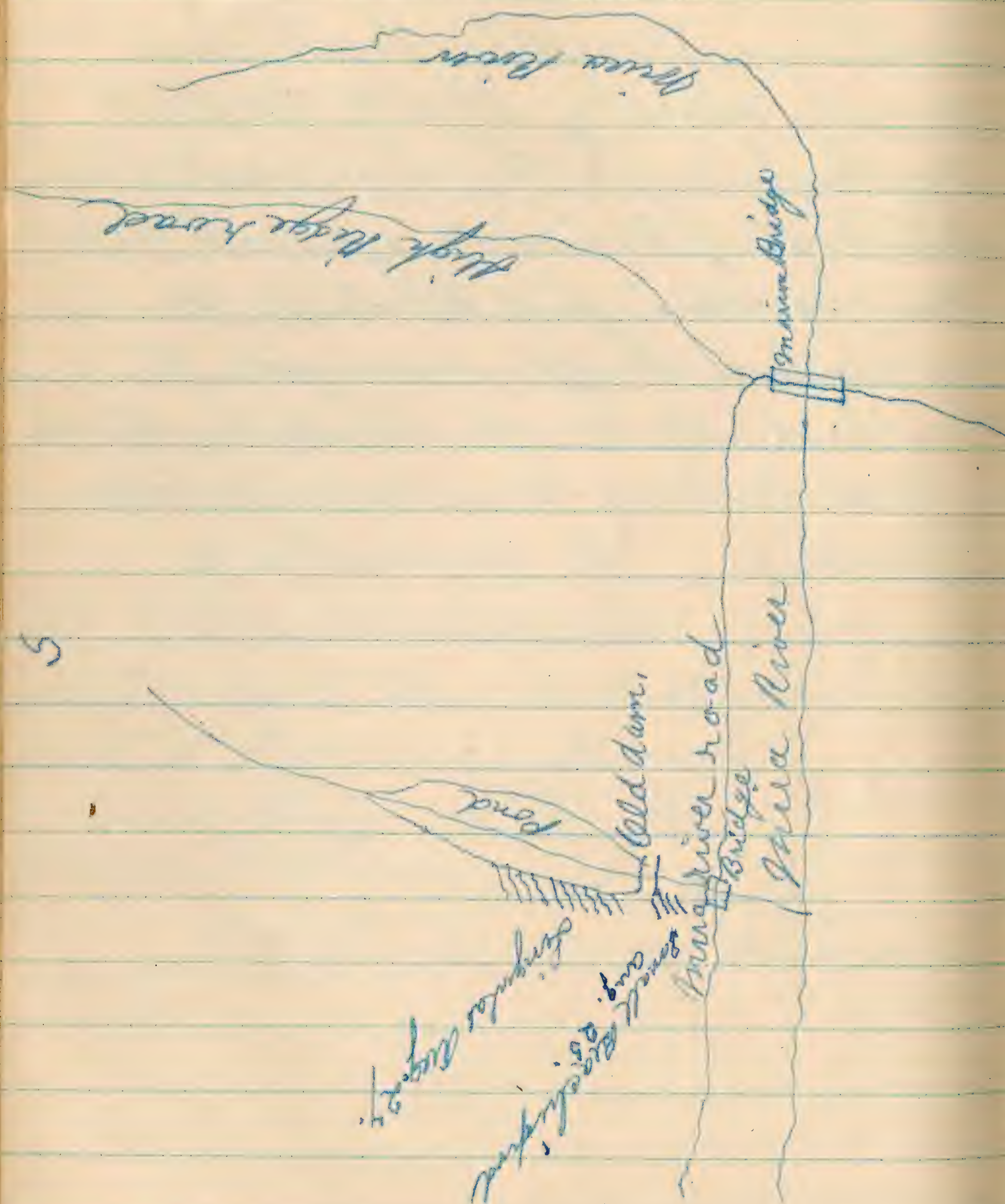
Searched along Morrison's Brook
2½ miles east of Marion Bridge,
South Side Mira River. Found in
the Cambrian shales there some
fine and peculiar trail markings.
In ravine near Mr. Morrison's
house found a few *Dictyonema*
(Brachiopods).

In afternoon searched along
Little Trout Brook half a mile
east of Morrison's Brook.

Found there on the farm of
Daniel Hammond a few
nice brachiopods and trilobite
trails.

August 25th

Unpleasant weather, light rain
nearly all day. Went to McNeil's
Brook by way of the river road, one
^{1½ miles} east of Marion Bridge, and near
the old dam just south of the
river road bridge managed to
collect about 75 small brachiopods.
These probably Olenus zone, Middle
Cambrian. See diagram Page 2.
Also page 22.



Monday August 27th

Had planned to go to Bigkout Brook today, 7 miles east of Main Bridge. Began to rain so stopped at McVeil's Brook and worked on shales south of where collection was made on Saturday. Found very fine lingulas, and, between shows, secured over 100 nice specimens of several genera & species mostly *Lingula* or *Lingulella*. Same fossils found in hard limestone bands as in shale. See opposite page.

August 28th.

Went 7 miles out on the
Bengal road east from
Marion Bridge, to the forks of
Big Trout Brook and Little Trout
Brook where Mr. Mathew said
fossils were to be found.

Not many were found.
Searched the shales along both
brooks for many miles and only
secured about 25 specimens of
trilobites & brachiopods. These were
same as found in the upper Cambrian
of McNeil's brook. Bad weather came
on at 4 P. M. & we returned to
Marion Bridge in driving rainstorm.

26

August 29th

Went out Big Front Brook way again to finish up the search in that direction. Searched several ravines leading up from the brooks. Found plenty of shale but no fossils. Along the hillsides were fragments of shales and flags like what Mathew calls Elcheminian but no fossils were in them and none were in situ. People in that vicinity said that Mr. Mathew spent considerable time in the open pasture lots on the drift material.

27

August 30th

Drove eighteen miles to Grand Mira. Found there considerable shale and Elcheminian slates but no fossils.

On way back on the other side of the river stopped again at Salmon River locality described on page 11 and looked for more fossils along Gillis hill. Found a very few. These appear to be Elcheminian. Am not sure

August 31st

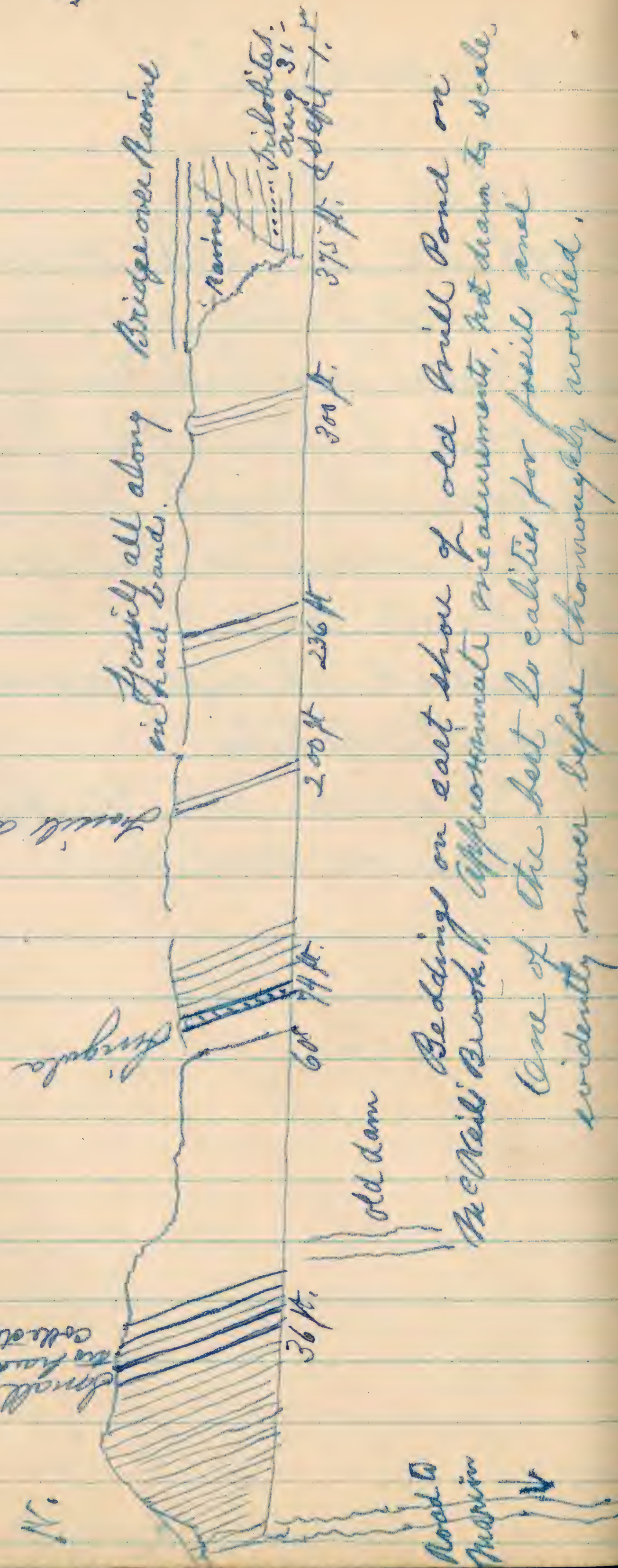
Worked all day on McNeil's Brook, on the east shore of the old mill pond, working beyond the point worked the 27th and secured a fine lot of specimens. Just at night found a fault in a ravine at the south end of the pond and here in the reversed shales found some good trilobites.

Diagram with thickness of beddings on next page.

E. Middle Cambrian.

Small abundant.

Small brachiopods on the lower bands. (see list) collected Aug. 25th 1900



September 1st

Worked through the forenoon on the beddings where the trilobites were found yesterday on the Raime at the head of the pond as shown in diagram on opposite page. Exhausted the locality by noon but secured quite a number of good trilobites and brachiopods. Some of them fine specimens.

Monday Sept. 3^d

Worked from head of the Pond
on McNeil's Brook from the
Trilobite ravine - (page 30)
going south to the bridge
at the Shingle Mill road where
the upper Cambrian comes in.

Examined all the beddings
carefully but obtained few
fossils!

September 4th

Worked in forenoon making boxes
for packing specimens. In afternoon
went to McLean's Brook and got
60 specimens of brachiopods and
fragments of trilobites from outcrop
No. 2 - Diagram page 12.

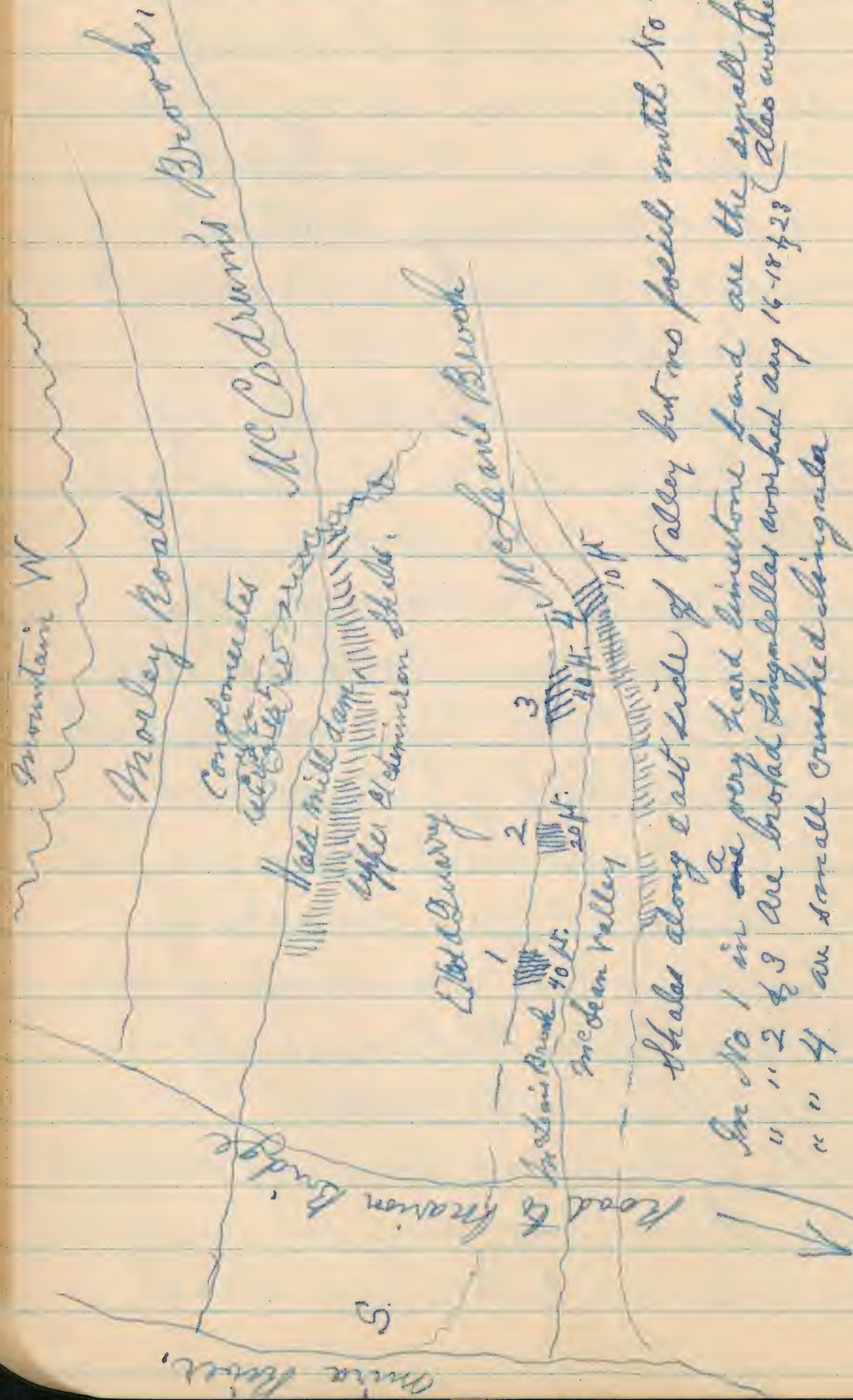
September 5th

Worked again on Mathews Etcheminian on Mc Bodum's Brook. Examined every layer of the shale and hard sandy bands carefully without discovering even a fragment of a fossil.

The conglomerates crop out on the west side of the Brook near the old dam and a few rods above cross over the Brook and run northeast into the pasture. Where they cross the Brook is seen the contact of the shales.

Next to the conglomerate are a few feet of soft shales, red & grey, resembling Kavlin, above this are about 30 ft.

of Mathews Upper Etcheminian shales and above these in the pasture lot are a few ft. of hard red somewhat calcareous sandstone. From this point for one mile everything is covered to McLeis Brook.

Sept. 6th

37

Worked on outcrop No 1 in McLean valley as shown in the diagram on opposite page. A few specimens were found here Aug. 16th. Today quarried extensively into the cliff and got access to the hard band carrying the fossils and was fortunate enough to obtain a fine lot of over 200 beautifully preserved brachiopods. Belonging to the genus *Lingulella* of *Maclure*.

Just at night found outcrop No 3 some distance up the valley. Evidences here of fine fossils. Same broad *Lingulellas* as in No. 2. Shall work this outcrop tomorrow.

Sept. 7th.

Worked the outcrop in McLean's Valley found last evening. This will be outcrop No. 3, as shown in diagram on page 36. Found some very fine brachiopods here.

Same species as found in No. 2. Exhausted the find then searched farther north and found another outcrop of fossils in a higher bed where small-lingulas were very numerous but many of them badly crushed. This makes outcrop No. 4 in McLean Valley. Secured a lot of these fossils!

Sept. 8th

In forenoon making boxes for packing specimens. In afternoon packing boxes.

Monday Sept. 10th

Explored ravines about 3 miles east of Marion Bridge on the north side of Mira River where told there were shales. Found no Cambrian shales there. They lie far above the Cambrian.

Packed my baggage in the evening and tomorrow morning start with my boxes of specimens for Sidney.

40

Sept. 11th

Got to Sidney at noon.

After dinner shipped

6 boxes to Mr. Walcott on
the Plant Line Steamer Florida.

Wrote to Mr. Walcott.

Am to stop here in Sidney
overnight and in the
morning go out 12 miles on
the Interoceanic Railway to
Leitch Creek where I am
told there are many fossils.
This is not far from Mathews
Boisdale Section.

41

Sept. 12th

A very hard rainstorm
prevailing today and wind
blowing a gale.

I shall not go out
to Leitch Creek until it
clears up.

42

Sept. 13th

Took early train this morning from Sidney to Leitches Creek Cross Roads Station. At this station hired a team to take myself and baggage out 3 miles to Angus Johnson's at Leitches Creek on Horrecks Lake where there are fossils.

Mr. Angus Johnson could not keep me but $\frac{1}{2}$ a mile farther on found a boarding place with Norman Johnson.

After dinner Angus Johnson went with me to the shore of the lake. There were no Cambrian shales there but hard limestones of the Silurian. As nothing else could be done worked there until sundown and secured a number of fine specimens.

43.

Finding that it was only an hours drive from Norman Johnsons to Mathews Boisdale Section concluded in the evening to remain with Mr. Johnson and hired him to help me and furnish team to all the points on Mathews Section. Am to pay him \$2.00 per day for himself and team. and \$3.- per week for board.

As Mr. Johnson has always lived until recently at Boisdale - which is only 4 miles distant, he knows the whole country and is familiar with the shale outcrops. He also knows localities not worked by Mr. Mathew.

44

Talked with Mr. Matthews on my
return to St. John about the locality.
He knew nothing about it. Did not
get on to it.

Sept. 14

45

Sept. 14th

Mr. Johnson took me 4 miles to
Johnson's Brook on his farm at
Boisdale. A locality not referred to
by Matthews. Examined the shales
along this brook from the highway
where a sawmill is being built.

After going over about 1000 ft.
of shales, about half way to
the dyenite on the Mountain
we found a thick band of coal
black shales carrying numerous
small trilobites apparently
Sphaerophthalmus of the *Peltura*
fauna. Worked this horizon
until 2 P.M. securing a fine
representation of the fossils.

Spent the rest of the day
searching the shales exposed
up the stream to the dyenites
on the Mountain. This whole
stream shows a great exposure
of Cambrian shales.

46

W
Fossil HillBridal Station
17

McClane's Brook.

4 miles to ocean

2 miles to Upper section

4 few fossils
Sept. 15No. 1
No. 2 Sept. 15
fine fossils
abundant

Barachois Glen

Little
Bear S' Cr
Lake

nothing about

Mr. Mathews knows
this locality

Mountain Range

90

47

Sept. 15th

Learned last evening of an extensive outcrop of Shales 8 miles south of Mr. Johnson's in Upper Leitch Creek district, we drove down there this morning and found a farmer who knew the locality, hired him to go with us. In a little ravine 2 miles from Upper Leitch Creek we found a few small brachiopods. This ravine is in what is called Barachois Glen. Going a little farther down the glen, and towards the Mountain, we found another extensive outcrop of Cambrian Shales in a ravine through which a small brook runs to McClane's Brook. This is 4 miles from the mouth of McClane's Brook which empties into Little Bear S' Cr Lake. Here we found a very prolific band in the shales and obtained a large number of finely preserved brachiopods. These, also, evidently *Peltura fauna*. Will paid today for hiring extra man & guide.
Diagram of locality opposite page.

Monday Sept. 19th.

Went this morning to the last locality discovered on Saturday afternoon. Worked there until 1 P.M. and secured a fine lot of well preserved brachiopods of several genera & species.

Then followed up Mc Clane's Brook for two miles examining several shale beds found at two or three points a few fossils.

At 2½ miles found shales in two little brooks running into Mc Clane's brook in greyish shales there we found a few brachiopods and fragments of a trilobite of a large species.

From this point went on to McMullins on the cross road to Boisdale where Dr Mathews had his headquarters when in this region. Found a few brachiopods in the shales south of Mc Mullins.

50.

Sept. 18.

Had rainstorm all
day.
No work.

51.

Sept. 19th.

Went to Barachois and
examined shales in the
R.R. cuttings but found no
fossils.

In ravine a short
distance south of the Barachois
Post Office east of the R.R.,
on the banks of a little stream
found shales of the Glenus
zone and made there a
good collection of Trilobites
and brachiopods, all well
preserved. Found two whole
Trilobites.

Mr. Athey knows nothing of this
ravine.

Sept. 20th

Went to Barachois and made search along the R.R. cuttings and along the highway and shore of Mainland on Bras d'Or Lake. From here towards Georges River comes in the Pictouman but could not find any fossils. Went north toward Georges River until we came upon the eruptive rocks near Georges River. Then returned to Barachois to the ravine worked yesterday here we got about 25 more good specimens among them one perfect trilobite. Examined 2 other small ravines. Do not see as much more can be done in this region.

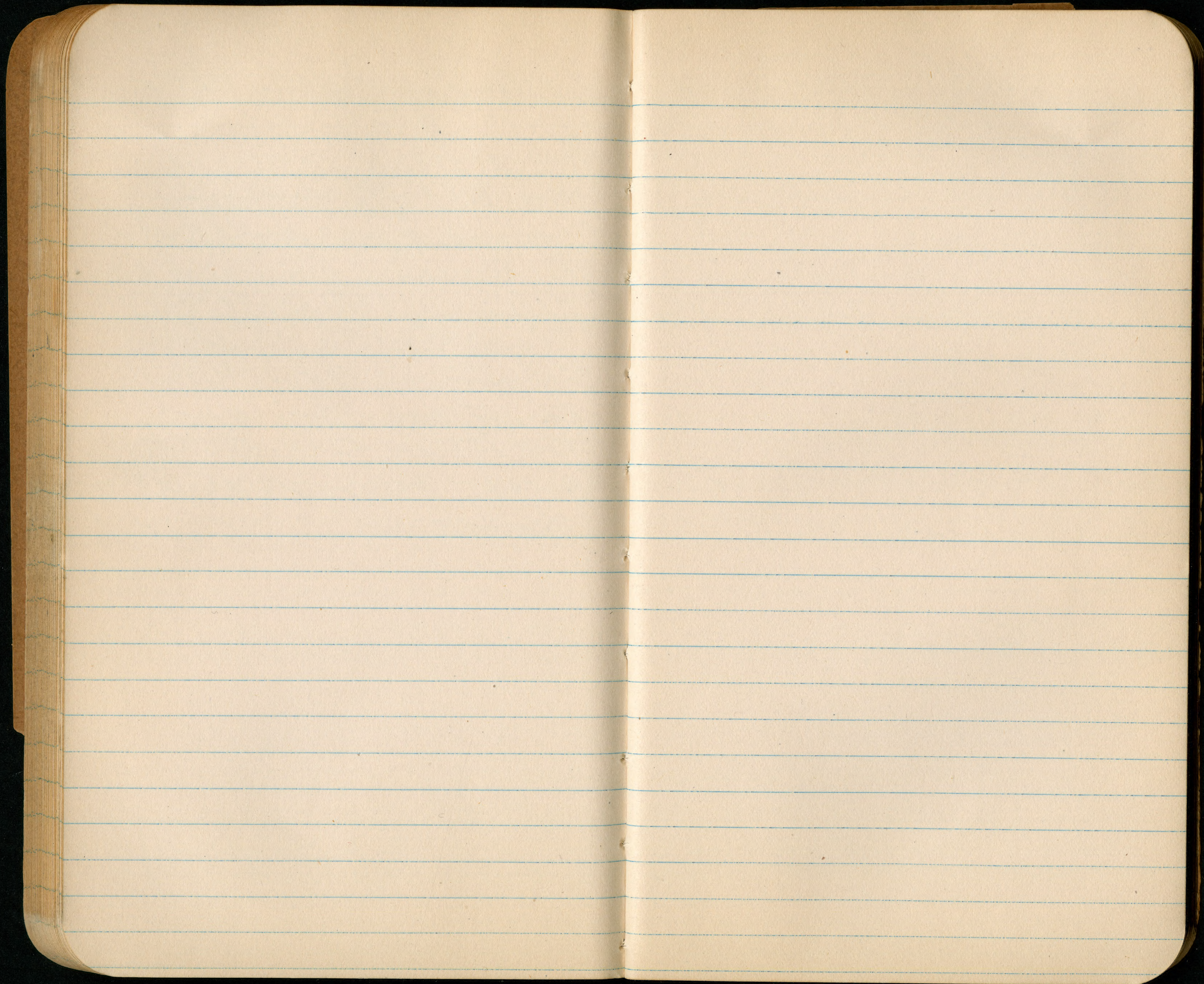
September 21st
Stormy day.

Sept. 22nd
Still Raining

Sept. 23rd
Sunday - Pouring.
Wind a gale!

Monday Sept. 24th

Mr. Johnson carried
me to North Sydney.
Packed boxes and packed
the bundles of the cimens and
delivered them to the
Plant Line to be shipped
to Boston on Oct. 2nd on
the Steamer Florida
No Steamer to Boston this
week. Tomorrow start
homewards.



Localities to be
numbered 1/1
Mc Neils Brook one 2 miles
East of Marion Bridge Cape Buten
Peltura zone. Mathews

Mc Leans Brook, one mile
East of Mc Bodrums Brook, and
1/2 miles West of Marion Bridge
Peltura zone. Mathews.

Big Trout Brook 7 miles East of
Marion Bridge. C. B. Peltura
Mathews

Little Trout Brook 3 miles
East of Marion Bridge C. B.

Morrison's Brook 2 1/2 miles
East Marion Bridge

Salmon River, Gillis Hill
13 miles South of Marion Bridge
May be Etchemin

Bara chois, C. Buton
1/2 Ravine South of Post Office
East Little Bras D'Or Lake
Peltura zone

Boisdale & Buton
Ravine 1/2 mile South
of Mc Mullins cross road
Road to Boisdale Station
Peltura zone

Bara chois, C. Buton
4 miles South of
Little Bras D'Or Lake
Peltura zone

Johnson's Brook, Boisdale
Peltura zone
1/2 mile East of Little
Bras D'Or Lake

Foresters Lake
Leitch Creek, C. B.
Silurian

